

REMARKS

Claims 1 - 11, 18 - 26, and 30 - 32 were pending, and have been cancelled without prejudice for renewal in a continuation and/or related application. New claims 34 - 66 are now pending. No new matter has been added.

Claims 1 - 4, 6, 10 - 11, and 30 - 32 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Pasternak (U.S. Patent No. 5,661,610). Claims 1 - 2, 6 - 11, and 30 - 31 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Sinclair et al. (U.S. Patent No. 5,940,222). Claim 5 was rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Pasternak. Claims 18 - 23 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Pasternak in view of Duncan et al. (U.S. Patent No. 5,905,591). Claims 18 - 21 and 23 - 26 were rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Sinclair in view of Duncan et al. All of these claims have been cancelled without prejudice. Accordingly, the prior rejections are now moot.

Applicants have now added new claims 34-66. These claims were added to more clearly recite the present invention. No new matter has been introduced. Additionally, Applicants have proposed adding new Figure 10, which has been submitted for the Examiner's approval. Again, no new matter has been added. Support for new Figure 10 can be found in the application as originally filed at page 12, line 7 and claim 2 among other places.

Claims 34 - 66 are not anticipated by Pasternak under 35 U.S.C. 102(b). For example, claim 34 relates to a distributed-aperture telescope having a distributed aperture. The Pasternak device does not in anyway relate to distributed-aperture telescopes, but is a non-distributed aperture telescope. The Examiner even conceded that Pasternak failed to discuss a distributed/multiple aperture telescope in section 10 of the Office Action. Pasternak's telescope includes four mirrors M0, M1, M2, and M3 and includes a calibration element that can be inserted into an optical path of the mirrors. See Pasternak's FIGs. 1 - 2 and Col. 4, lines 16-24. Pasternak's mirrors M0, M1, M2, and

M3 do not form a distributed aperture telescope as recited in claim 34 but from a non-distributed aperture telescope. Accordingly, Pasternak and the present invention are entirely unrelated. For at least this reason, Pasternak does not anticipate the invention as recited in claim 34.

Additionally, claim 34 recites "a phase plate disposed within a vicinity of the intermediate image plane, wherein the phase plate is configured to adjust a phase relationship of the portion of the electromagnetic radiation associated with a resulting image." Pasternak certainly does not disclose or, even suggest, a phase plate configured adjust the phase relationship of electromagnetic radiation. Pasternak's calibration element is not configured to adjust phase relationships of images formed by Pasternak's telescope. The calibration element is an infrared radiation source that is inserted into an optical path of the telescope when the telescope requires calibration. As can be inferred from Pasternak's FIGs. 1 and 2, the calibration source is removed from the optical path when the telescope is used to collect light as the calibration source blocks the optical path between M1 and M2. Accordingly, the calibration source is not a device used when the telescope is in use and is not a device configured to adjust a phase relationship. For at least these additional reasons, Pasternak does not anticipate claim 34.

Independent claims 49 and 61 both relate to distributed aperture optical systems and recite similar limitations as those of claim 34, which was discussed above and distinguished from Pasternak. For at least this reason, Pasternak does not anticipate claims 49 and 61.

Pending claims 34 - 66 are not anticipated by Sinclair et al. under 35 U.S.C. 102(b). For example, claim 34 relates to a distributed-aperture telescope having a distributed aperture. The Sinclair device, as understood, does not in anyway relate to distributed-aperture telescopes, but relates to zoom lenses. Sinclair's zoom lens includes first and second mirrors and various sets of lenses. Sinclair's first and second mirrors and sets of lenses are not configured as a distributed-aperture telescope, but are configured as a non-distributed zoom lens. The Examiner has even conceded that Sinclair fails to discuss a distributed/multiple aperture telescope in section 11 of the Office Action.

Accordingly, Sinclair and the present invention are entirely unrelated. For at least this reason, Sinclair does not anticipate the invention as recited in claim 34.

Additionally, claim 34 recites “a phase plate disposed within a vicinity of the intermediate image plane, wherein the phase plate is configured to adjust a phase relationship of the portion of the electromagnetic radiation associated with a resulting image.” Sinclair certainly does not disclose or, even suggest, a phase plate configured to adjust a phase relationship. Sinclair’s zoom lens, as understood, includes a lens L1B (FIG. 7) having relatively substantial optical power as evidenced by the relatively highly curved front and back surfaces of the lens. The relatively curved surfaces of lens L1B serve to substantially bend light entering and exiting the lens. Accordingly, Sinclair’s lens L1B is not configured to adjust a phase relationship, but is configured to bend light. Bending light and adjusting a phase relationship are two entirely different physical phenomena. Moreover, Sinclair’s zoom lens is not a three mirror anastigmat (TMA), but is a two mirror lens. For at least these additional reasons, Sinclair does not anticipate claim 34.

Independent claims 49 and 61 both relate to distributed aperture optical systems and recite similar limitations as those of claim 34, which was discussed above and distinguished from Sinclair. For at least this reason, Sinclair does not anticipate claims 49 and 61.

CONCLUSION


In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

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PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,


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VERSION WITH MARKINGS TO SHOW CHANGES MADE

The paragraphs beginning at page 7, line 1 and ending at page 7, line 5 have been rewritten as follows:

Figure 8 is a plot showing phase error as a function of field, showing results with and without use of a phase error corrector according to the present invention; **[and]**

Figure 9 is a schematic, vertical sectional view showing an optical element according to another aspect of the present invention; and

Figure 10 is a simplified schematic of a phase error corrector configured as a diffractive element.

The paragraph beginning at page 12, line 7 has been rewritten as follows:

The example given herein is a refractive phase error corrector, but the concept can easily be extended to a reflective phase error corrector which would eliminate any potential chromatic aberration problems. Moreover, the present invention contemplates that the phase error corrector is a diffractive element 30' (see FIG. 10), such as a holographic device. Whether reflective, refractive or holographic the invention uses the corrector plate, with little or no power at or near the intermediate focus of the collector telescope to control distortion in a proscribed manner to eliminate the phasing error over the field of view in a distributed aperture telescope system.